PATTON Electronics Co.

SmartNode 4950-NCE Series

Multi-Port T1/E1/PRI VoIP Enterprise Gateway Router

Quick Start Guide

Part Number: **07MSN4950-NCE-QS, Rev. A**
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WARNING

- **Do not open the device when the power cord is connected. For systems without a power switch and without an external power adapter, line voltages are present within the device when the power cord is connected.**
- **For devices with an external power adapter, the power adapter shall be a listed *Limited Power Source* The mains outlet that is utilized to power the device shall be within 10 feet (3 meters) of the device, shall be easily accessible, and protected by a circuit breaker in compliance with local regulatory requirements.**
- **For AC powered devices, ensure that the power cable used meets all applicable standards for the country in which it is to be installed.**
- **For AC powered devices which have 3 conductor power plugs (L1, L2 & GND or Hot, Neutral & Safety/Protective Ground), the wall outlet (or socket) must have an earth ground.**
- **For DC powered devices, ensure that the interconnecting cables are rated for proper voltage, current, anticipated temperature, flammability, and mechanical serviceability.**
- **WAN, LAN & PSTN ports (connections) may have hazardous voltages present regardless of whether the device is powered ON or OFF. PSTN relates to interfaces such as telephone lines, FXS, FXO, DSL, xDSL, T1, E1, ISDN, Voice, etc. These are known as "hazardous network voltages" and to avoid electric shock use caution when working near these ports. When disconnecting cables for these ports, detach the far end connection first.**

- **Do not work on the device or connect or disconnect cables during periods of lightning activity.**

In accordance with the requirements of council directive 2002/96/EC on Waste of Electrical and Electronic Equipment (WEEE), ensure that at end-of-life you separate this product from other waste and scrap and deliver to the WEEE collection system in your country for recycling.

WARNING

This device contains no user serviceable parts. This device can only be repaired by qualified service personnel.

CAUTION

Electrostatic Discharge (ESD) can damage equipment and impair electrical circuitry. It occurs when electronic printed circuit cards are improperly handled and can result in complete or intermittent failures. Do the following to prevent ESD:

- **Always follow ESD prevention procedures when removing and replacing cards.**
- **Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact. Connect the clip to an unpainted surface of the chassis frame to safely channel unwanted ESD voltages to ground.**
- **To properly guard against ESD damage and shocks, the wrist strap and cord must operate effectively. If no wrist strap is available, ground yourself by touching the metal part of the chassis.**

1.0 Power up the SmartNode

1. Insert the barrel type connector end of the AC power cord into the external power supply connector.
2. Insert the female end of the power cord into the internal power supply connector.
3. Verify that the AC power cord included with your router is compatible with local standards. If it is not, contact Patton to replace it with a compatible power cord.
4. Connect the male end of the power cord to an appropriate power outlet.
5. Wait until the *Power* LED stops blinking and remains constantly lit. Now the SmartNode is ready to configure.

2.0 Connecting the SmartNode to your laptop PC

CAUTION

The interconnecting cables shall be acceptable for external use and shall be rated for the proper application with respect to voltage, current, anticipated temperature, flammability, and mechanical serviceability.

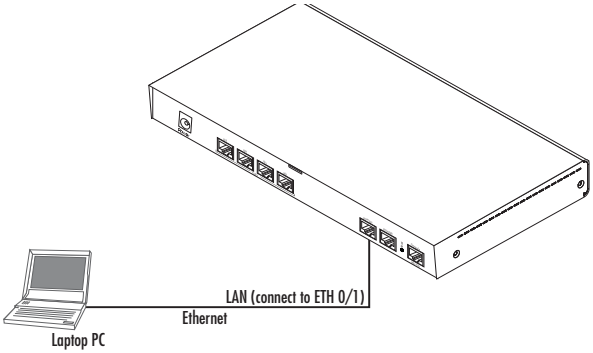

Figure 1. Connecting to the PC

1. Connect the PC's Ethernet port to *LAN (ETH 0/1)* port of the SmartNode 4950-NCE. The SmartNode 4950-NCE Series is equipped with Auto-MDX Ethernet ports, so you can use straight-through or cross-over Ethernet cables for host or hub/switch connections. (See **figure 1**.)
2. The SmartNode comes with a built-in DHCP server to simplify configuration. Therefore, to automatically configure the PC for IP connectivity to the SmartNode, configure the laptop PC for DHCP. The SmartNode will provide the PC with an IP address. Note that only Full Duplex operation is supported. Use auto negotiation for best results.
3. Check the connection to the SmartNode by executing the *ping* command from the PC command window as follows:

```
ping 192.168.1.1
```

3.0 Configuring the desired IP address

3.1 Factory-default IP settings

The factory default configuration for the Ethernet interface IP addresses and netmasks are listed in **table 1**. Both Ethernet interfaces are activated upon power-up. LAN interface *ETH 0/1 (LAN)* provides a default DHCP server. The WAN interface uses DHCP client to get the IP address and netmask automatically from the service provider.

Table 1. Factory default IP address and network mask configuration

Item	IP Addresss	Network Mask
WAN interface Ethernet 0 (ETH 0/0)	DHCP	DHCP
LAN interface Ethernet 1 (ETH 0/1)	192.168.1.1	255.255.255.0
DHCP server address range (LAN)	192.168.1.10-192.168.1.99	255.255.255.0

If these addresses match with those of your network, go to section **4.0 "Connecting the SmartNode to the network"** on page 5. Otherwise, continue with the following sections to change the addresses and network masks.

3.2 Login

1. To access the SmartNode, start the Telnet application on your PC. Type the default IP address into the address field: **192.168.1.1**. Accessing your SmartNode via a Telnet session displays the login screen. Type the factory default login: *administrator* and leave the password empty. Press the *Enter* key after the password prompt.

```
login:administrator
password:<Enter>
192.168.1.1>
```

2. After you log in, your SmartNode will be running in operator execution mode (indicated by > character in the command line prompt). To enter configuration mode, use the commands *enable* and *configure*.

```
192.168.1.1>enable
192.168.1.1#configure
192.168.1.1(cfg)#
```

3.3 Changing the WAN IP address

1. To modify IP configuration settings, you must enter *context IP* mode. Enter the following command:

```
192.168.1.1(cfg)#context ip router
192.168.1.1(ctx-ip)[router]#
```

2. Now you can set your IP address and network mask for the interface *ETH 0/0(WAN)*. In this example a network 172.16.1.0/24 is assumed. The IP address in example is set to *172.16.1.99*. (You should set it to the IP address that the network provider has given you.)

Note The examples in this guide use a private IP network with the network address *172.16.1.0/24*.

```
192.168.1.1(ctx-ip)[router]#interface WAN
192.168.1.1(if-ip)[WAN]#ipaddress 172.16.1.99 255.255.255.0
2002-10-29T00:09:40 : LOGINFO    : Link down on interface WAN.
2002-10-29T00:09:40 : LOGINFO    : Link up on interface WAN.
172.16.1.99(if-ip)[WAN]#
```

3. Copy this modified configuration to your new start-up configuration. This will store your changes in non-volatile memory. On the next start-up the system will initialize itself using the modified configuration.

```
172.16.1.99 (if-ip)[WAN]#copy running-config startup-config
172.16.1.99 (if-ip)[WAN]#
```

The SmartNode can now be connected to your network.

4.0 Connecting the SmartNode to the network

CAUTION

The interconnecting cables shall be acceptable for external use and shall be rated for the proper application with respect to voltage, current, anticipated temperature, flammability, and mechanical serviceability.

In general, the SmartNode will connect to the network via the *WAN (ETH 0/0)* port. This enables the SmartNode to offer routing services to the PC hosts on *LAN (ETH 0/1)* port. The SmartNode 4950-NCE Series provides an auto-MDX feature for both Ethernet ports, so you can use a straight-through or cross-over cable to connect to a host or a switch (see **figure 2**).

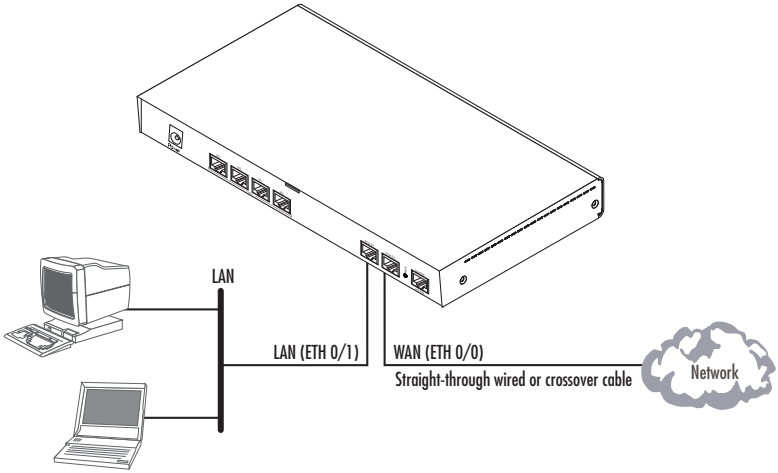

Figure 2. Connecting the SmartNode to the network

1. You can check the connection with the ping command from the SmartNode to another host on the local LAN.

```
172.16.1.99(if-ip)[WAN]#ping <IP Address of the host>
```

Note If the WAN address is ***not*** set to DHCP, to ping a device outside your local LAN you must first configure the default gateway. (For information on configuring the default gateway, refer to section "Set IP addresses" in Appendix C, "Command Summary" of the *SmartNode Series SmartWare Software Configuration Guide*.)

5.0 Loading the configuration (optional)

Patton provides a collection of configuration templates on the CD-ROM shipped with your SmartNode device—and also on the support page at **www.patton.com/voip**—one of which may be similar enough to your application that you can use it to speed up configuring the SmartNode. Simply download the configuration note that matches your application to your PC. Adapt the configuration as described in the configuration note to your network (remember to modify the IP address) and copy the modified configuration to a TFTP server. The SmartNode can now load its configuration from this server.

Note Patton regularly adds new configuration templates to the collection at **www.patton.com/voip**, so if you do not see your application on the CD-ROM, it may have been added to the website.

Note If your application is unique and not covered by any of Patton's configuration templates, you can manually configure the SmartNode instead of loading a configuration file template. In that case, refer to the

SmartNode Series SmartWare Software Configuration Guide for information on configuring the SmartNode device.

In this example we assume an TFTP server resides on the host with the IP address 172.16.1.11 and the configuration file named *SN.cfg* resides in the root directory of the TFTP server.

```
172.16.1.99(if-ip)[WAN]#copy tftp://172.16.1.11/SN.cfg startup-
    config
Download...100%
172.16.1.99(if-ip)[WAN]#
```

After you reboot the SmartNode the new startup configuration will become active.

IMPORTANT

When you issue the reload command, the SmartNode will ask if you want to copy the running configuration to the startup configuration. Since you just downloaded a configuration file to the startup configuration you must answer this question with ***NO***. Otherwise, the downloaded configuration will be overwritten and lost!

```
172.16.1.99(if-ip)[WAN]#reload
Running configuration has been changed.
Do you want to copy the 'running-config' to the 'startup-config'?
Press 'yes' to store, 'no' to drop changes : no
Press 'yes' to restart, 'no' to cancel : yes
The system is going down
```

6.0 Additional Information

Refer to the *SmartNode Series SmartWare Software Configuration Guide* and the *SmartNode Getting Started Guide* located on the CD-ROM shipped with your SmartNode device and available online at **www.patton.com/manuals.** For detailed information about:

- Installing, configuring, operating, and troubleshooting.
- Warranty, trademark & compliance

The CD-ROM also includes many freeware and shareware tools, including TFTP servers, and Telnet clients.

A.0 Customer and Technical Support

Toll-Free VoIP support: call **sip:support@patton.com** with a VoIP SIP client

Online support: www.**patton.com**

E-mail support: **support@patton.com**—answered within 1 business day

Telephone support:

- Standard: +1 (301) 975-1007 (USA), Monday–Friday: 8:00 am to 5:00 pm EST (1300 to 2200 UTC/GMT)
- Alternate: +41 (0)31 985 25 55 (Switzerland), Monday–Friday: 8:00 am to 5:00 pm CET (0900 to 1800 UTC/GMT)

Fax: **+1 (253) 663-5693** (USA) **or +41 (0)31 985 25 26** (Switzerland)

B.0 Compliance Information

PSTN Regulatory Compliance:

- TBR 12 & 13 (E1)
- AS/ACIF S016
- AS/ACIF S038
- AS/ACIF S043 (G.SHDSL card)
- NZ ISDN Layer 3 Supplement

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For warranty, trademark and compliance information, refer to the *Models SN4950-NCE Series Getting Started Guide* located on the CD-ROM that came with your VoIP Gateway Router or available online at **www.patton.com**.